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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/720,094	11/25/2003	Yasunori Bito	Q78644	4905
7590 06/16/2005 SUGHRUE, MION, ZINN, MACPEAK & SEAS 2100 Pennsylvania Avenue, N.W. Washington, DC 20037			EXAMINER DICKY, THOMAS L	
			ART UNIT 2826	PAPER NUMBER

DATE MAILED: 06/16/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/720,094

Applicant(s)

BITO, YASUNORI

Examiner

Thomas L. Dickey

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.


- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 May 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 and 15-35 is/are pending in the application.
- 4a) Of the above claim(s) 19-35 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3,5-9,11,12 and 15 is/are rejected.
- 7) ☒ Claim(s) 2,4,10,13 and 16-18 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.


Minhloan Tran
Primary Examiner
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Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 02/10/2005.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

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DETAILED ACTION

1. The amendment filed 05/20/2005 has been entered.

Information Disclosure Statement

2. The Information Disclosure Statement filed on 02/10/2005 has been considered.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1,3,5,6-9,11,12, and 15 are rejected under 35 U.S.C. 102(b) as being anticipated by KATO ET AL. (2001/019,131).

Kato et al. discloses a heterojunction field effect type semiconductor device comprising a GaAs substrate 501; a first conductivity (n) type GaAs channel layer 506 formed over said GaAs substrate 501; a first semiconductor layer 509 including no aluminum formed over said channel layer 506; a GaAs cap layer 512 of the first conductivity (n) type formed on said first semiconductor layer 509, said cap layer 512 creating a first recess on said first semiconductor layer 509; first 572 and second 573 ohmic electrodes formed on said cap layer 512; a second AlGaAs or InGaP (note

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paragraph 0027 discloses both alternatives) semiconductor layer 520 of second conductivity (p) type formed on said first semiconductor layer 509 within said first recess, said second semiconductor layer 520 being isolated from said cap layer 512; a gate electrode 571 formed on said second semiconductor layer 520; and a third semiconductor layer 510/511 having a thickness (30 nm) of more than 5 nm, made of GaAs/AlGaAs (part 510 being GaAs, and the remainder of third layer 510/511, formed on part 510, being AlGaAs part 511) and interposed between said first semiconductor layer 509 and said cap layer 512 and having a second recess, said second semiconductor layer 520 passing through the second recess of said third semiconductor layer 510/511 to reach said first semiconductor layer 509.

With further regard to claims 6-9, Kato et al.'s heterojunction field effect type semiconductor device further comprises an AlGaAs etching stopper layer 508 or an InGaP wide recess etching stopper layer 530 of said first conductivity (n) type beneath said cap layer 512, said InGaP layer 530 being in contact with said second semiconductor layer 520.

Note figures 30-34 and paragraphs 0027 and 201-205 of Kato et al.

Allowable Subject Matter

4. Claims 2,4, 10, 13 and 16-18 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. With particular regard to claims

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16-18, note that in these claims Applicant claims various embodiments of a two part GaAs/AlGaAs third semiconductor layer featuring a first GaAs part formed on a second AlGaAs part, while Kato et al.'s heterojunction field effect type semiconductor device is restricted to embodiments of a two part GaAs/AlGaAs third semiconductor layer with a first AlGaAs part 511 formed on a second GaAs part 510.

Response to Arguments

5. Applicant's arguments filed 05/20/2005 have been fully considered but they are not persuasive.

It is argued, at page 16 of the remarks, that "claim 1 is amended, incorporating features of claim 16's allowable subject matter, and herein requires, '... a third semiconductor layer made of GaAs/AlGaAs interposed between said first semiconductor layer and said cap layer and having a second recess..." This remark is a misrepresentation on Applicant's part. Sadly, the reality is that claim 1 is amended to bear nothing more than a passing resemblance to claim 16's allowable subject matter. Claim 16 requires, at the very least, a third semiconductor layer comprising an AlGaAs layer and a GaAs layer formed on said AlGaAs layer. Claim 18 requires, at the very least, said self-same third semiconductor layer comprising an AlGaAs layer and a GaAs layer formed on said AlGaAs layer. Claim 1, as amended, does not include even this minimum.

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Conclusion

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, THIS ACTION IS MADE FINAL. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thomas L. Dickey whose telephone number is 571-272-1913. The examiner can normally be reached on Monday-Thursday 8-6.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nathan J. Flynn can be reached on 571-272-1915. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

TLD
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